

00-103

Southwestern Bell Telephone  
550 McCullough  
San Antonio, Texas 78215



August 4, 2000

Mr. Dale Hatfield  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, N.W.  
Room 7-A-340  
Washington, D.C. 20554

Re: **Final Service Disruption Report**

Dear Mr. Hatfield:

Pursuant to the requirements established in the Report and Order in CC Docket No. 91-273 (Amendment of Part 63 of the Commission's Rules to Provide for Notification by Common Carriers of Service Disruptions), **Southwestern Bell** submits the attached **Final Service Disruption Report** associated with a service disruption in **McAllen, Texas on July 6, 2000**.

An Initial Service Disruption Report was faxed to the FCC's Monitoring Watch Officer on that date.

Please stamp and return the provided copy to confirm your receipt. Please contact me if you have questions regarding this service disruption.

Sincerely,

  
Denise Buschfort  
210-886-4586



A member of the SBC global network

## FCC SERVICE DISRUPTION REPORT

Retention Period: 6 Years

**Type of Report:**

☐ Initial Report

☐ Update

☒ Final

**Occurred:** Date: 07/06/2000 Time: 23:09

☒ 50,000 or More Customers

☐ 30,000 - 49,999 Customers

**Ended:** Date: 07/07/2000 Time: 00:11

☐ Fire incident  $\geq$  1,000 lines

Special Offices/Facilities

**Duration (in minutes):** 62 minutes

☒ 911

☐ Major/Medium Airport

☐ NCS Request

**Geographic Area Affected:** McAllen, Texas

**Estimated Customers Affected:** 66,961

**Type(s) of Services Affected:**

☐ Local (Intraoffice)

☒ IntraLATA ☒ InterLATA ☒ 800

☒ LIDB ☒ Operator Services:

☒ Interexchange

☒ Switched Access (interoffice)

☒ Cellular ☒ International

☒ E911/911

☐ FAA

☐ All

**Estimated Blocked Calls:** 55,801

**Apparent or Known Cause of the Outage:**

During the week of July 1, 2000, Network Operations Center (NOC) technicians had been working with Maintenance Engineering to resolve recurrent 'input unlocked' alarms in the Stratum 2 Clock at McAllen, Texas. Maintenance Engineering consulted with the manufacturer, Telecom Solutions, and determined that the alarm condition indicated one of the ST2 cards was faulty in the clock. The decision was made to upgrade the clock to a Stratum 2-E level because this would solve the 'input unlocked' condition and upgrade at the same time. While following the Telecom Solutions procedures to replace the ST2 cards to ST2-E cards, the clock failed and timing was interrupted to the McAllen Murray 5ESS switch, the McAllen Murray DMS STP and all transport equipment in the office. The loss of timing caused all SS7 links to fail, resulting in the McAllen-Murray DS0 to be isolated from the CCS-7 Network.

Standard procedures (a generic Field Service Bulletin from Telecom Solutions) were provided to perform the necessary work. However, there was no *Event Notification* issued to advise that the work was taking place, nor was there a communication to the NOC that the technician was in the office to start the work. This contributed to a slow response from NOC personnel, and subsequently, E911 was not verified nor was the attempt made to re-route the traffic to an alternate 7-digit number within the office.

☐ Official File Copy, If Checked In Red

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Root Cause is Hardware Failure – Processor Community Failure

**Name and Type of Equipment Involved:** Telecom Solutions Stratum 2 Clock

**Specific Part of Network Involved:** SS7 network

**Methods used to Restore Service:**

The ST2 card on side A was changed first. The Telecom Solutions Stratum 2 clock was still in the process of initializing the ST2-E card in side A when the technician in the office found that several transport facilities had failed. The technician attempted to page the Maintenance Engineer responsible for the upgrade without realizing that the SS7 Link timing had been lost and the office was isolated. The Engineer could not quickly respond to the page since the office was in an SS7 isolation. A restoration conference bridge was established with the NOC, Maintenance Engineer and Field Forces. The original ST2 card was input back into the Clock and the clock was force-switched to side A. This restored all services. The Maintenance Engineer arrived on-site at approximately 3:30 am and completed the upgrade to the Stratum 2 by using a portable Cesium clock to bypass the Stratum 2 in the office during the upgrade procedure.

**Steps Taken to Prevent Recurrence:**

1. Southwestern Bell contacted Telecom Solutions to change the warning statement in FSB#098-40620-12R1. The current statement reads: "INPUTS UNLOCKED is not an out-of-service condition." The warning should be amended to read: "INPUTS UNLOCKED is not an out-of-service condition, correcting the failure could cause a phase variance and the remaining ST2 card to fail." Telecom Solutions provided a positive response to this request on July 28, 2000.
2. Southwestern Bell contacted Telecom Solutions to add a warning statement on all of the Field Service Bulletins: "*Before working on this equipment, be sure to consult the local Maintenance Window Policies.*" Telecom Solutions provided a positive response to this request on July 28, 2000.
3. In order to prevent the possibility of a similar failure, Southwestern Bell will upgrade the remaining existing ST2 clocks in the South Texas area. Cards have been ordered to upgrade a total of five offices located in Harlingen, Corpus Christi, Austin and San Antonio. A manager will be on-site during all upgrade activity with a portable Cesium clock to help minimize failure. This work is scheduled to be completed by September 30, 2000.
4. Network Operations Center (NOC) technicians have been counseled on both E911 re-route policies and event notification process to ensure that appropriate action is taken to either prevent or shorten the duration of an E911 isolation during an outage.

**Applicable Best Practice:** Southwestern Bell reviewed the Network Reliability: The Path Forward, dated April 1996 and evaluated all recommendations and best practices. Based on the root cause analysis the most appropriate focus area was:

Increased Interconnection, Reference 5.1.2.5 – Synchronization and Timing

**Best Practices Used:** Southwestern Bell observes those practices that are consistent with providing outstanding customer service.

**Analysis of Effectiveness of Best Practices:**

While the Applicable Best Practice referenced above does not specifically address this outage, it does identify two recommendations that Southwestern Bell adheres to:

1. Appoint a Synchronization Coordinator who performs the responsibilities as outlined in SR-TSV-002275.
2. Complying with synchronization standards addressed in ANSI Standard T1.101, entitled "Digital Network Synchronization".

**Prepared by:** Denise Buschfort  
**Date submitted:** August 4, 2000

**Telephone:** 210-886-4586  
**Time:** 20:30



A member of the SBC global network

00-103

Retention Period: 5 Years

## FCC SERVICE DISRUPTION REPORT

Type of Report: ☒ Initial Report ☐ Update ☐ Final

Occurred: Date: 07/06/00

Time: 23:09

☒ 50,000 or More Customers

☐ 30,000 - 49,999 Customers

Ended: Date: 07/07/00

Time: 00:04

☐ Fire incident ≥ 1,000 lines

Special Offices/Facilities

Duration (in minutes): 56 minutes

☐ 911

☐ Major/Medium Airport

☐ NCS Request

Geographic Area Affected: McAllen, Texas

Estimated Customers Affected: 66,961

Type(s) of Services Affected:

☒ LIDB ☐ Operator Services

☐ Cellular ☐ International

☐ Local (Intraoffice)

☐ Interexchange

☒ E911/911

☒ IntraLATA ☒ InterLATA ☒ 800

☒ Switched Access (interoffice)

☐ FAA

☐ All

Estimated Blocked Calls: 55,801

**Apparent or Known Cause of the Outage:** At 23:09 on Thursday July 6, 2000 a technician in the McAllen CO. was doing a procedure to upgrade the bits clock. The technician replaced a circuit pack in the bits clock and subsequently the clock failed. This isolated the McAllen CO. Service was restored on Friday July 7, 2000 @ 00:04. Investigation is underway to determine why the bits clock failed.

**Name and Type of Equipment Involved:** ST2 BITS CLOCK

**Specific Part of Network Involved:** McAllen DSO

**Methods used to Restore Service:** Technician replaced original circuit pack and the office restored.

**Steps Taken to Prevent Recurrence:** Under Investigation.

**Prepared by:** Denise Buschfort

**Date submitted:** 7/7/2000

**Telephone:** 210 886-4586

**Time:** 03:50

☐ [illegible]

SW-1414

(Rev. 3-99)